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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,402	09/16/2003	Warren M. Farnworth	2269-5595US (01-0088.00/U)	2929
24247	7590	12/01/2006	EXAMINER CHEN, VIVIAN	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			ART UNIT 1773	PAPER NUMBER

DATE MAILED: 12/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/663,402

Applicant(s)

FARNWORTH ET AL.

Examiner

Vivian Chen

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-45, 69-82 and 92-111 is/are pending in the application.
- 4a) Of the above claim(s) 28, 38, 39, 75, 81 and 82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-27, 29-37, 40-45, 69-74, 76-80 and 92-111 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-20, 46-68, 83-91 have been cancelled by Applicant.

***Specification***

2. The amendments filed 9/15/2005 and 3/15/2006 and 10/30/2006 are objected to under 35 U.S.C. 132(a) because they introduce new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the amendments reciting "programmed material consolidation".

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

3. Claims 21-27, 29-37, 40-45, 69-74, 76-80, 92-111 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification only provides support for the recitation of stereolithographic fabrication, not other methods of programmed material consolidation (e.g., fused deposition modeling, selective laser sintering, polyjet, thermal or photopolymer phase change inkjet processes, etc.) which are recognized to be distinct technologies or techniques in the art.

Art Unit: 1773

4. Claims 26-27, 37, 73-74 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 26-27, 37, 73-74, the phrase “substantially planar” is vague and indefinite because it is unclear what constitutes “substantially” planar.

5. The rejections of claims 43, 45 under 35 U.S.C. 112, second paragraph, in the previous Office Action have been withdrawn in view of Applicant’s arguments presented 9/6/2006 and 10/30/2006.

***Claim Rejections - 35 USC § 103***

6. The rejection under 35 U.S.C 103(a) of claims 69, 71, 76 have been withdrawn in view of Applicant's amendments filed 10/30/2006.

***Response to Amendment***

7. The rejections of claims 21-22, 24, 26-27, 35-37, 40-42, 45, 73-74 under 35 U.S.C. 103(a) have been withdrawn in view of Applicant’s amendments filed 3/15/2006. However, the Examiner's withdrawal of these rejections does **NOT** constitute a concession as to the applicability or non-applicability of the previously cited prior art to the previously presented claims or to the claims as presently amended. Upon cancellation of any new matter, some or all rejections may be reinstated.

*Response to Arguments*

8. Applicant's arguments filed 9/6/2006 and 10/30/2006 have been fully considered but they are not persuasive.

(A) Applicant argues that the specification as originally filed provides support for the term "programmed material consolidation". However, while the specification provides support for a particular sub-type of programmed material consolidation (i.e., stereolithography), it does not provide support for the considerably broader genus term "programmed material consolidation" which encompasses virtually any of numerous additive-type rapid prototyping methods which utilizes programming to form an object (e.g., fused deposition modeling, selective laser sintering, polyjet, thermal or photopolymer phase change inkjet processes, vapor deposition or chemical precipitation processes, etc.) which are recognized by one of ordinary skill in the art as being distinct methods or techniques, many of which have requirements and considerations which are not addressed or contemplated by the specification as originally filed and therefore are *not* deemed enabled by the specification as originally filed. For illustrative examples, see the attached exhibits ("RAPID PROTOTYPING STEREOLITHOGRAPHY, SELECTIVE LASER SINTERING, AND POLYJET...." (Abstract); Wikipedia article on RAPID PROTOTYPING; HIATT ET AL (US 2004/0148353), paragraph 0016) (see also attached article abstracts) which disclose various additive-type rapid prototyping technologies which would fall under the broad designation of "programmed material consolidation" but are recognized in the art as being distinct technologies from stereolithography. The specification as originally filed does not provide any guidance as to how the operational differences of various

Art Unit: 1773

additive-type rapid prototyping techniques (e.g., types of materials, operating conditions, etc.) may affect the usage or applicability of the claimed invention, nor is there indication that the specification as originally filed contemplated (e.g., via working examples or statements) which reasonably imply broader applicability to a variety of additive-type prototyping technologies. Therefore, the disclosure of only stereolithography in the specification as originally filed does not provide adequate support for the substantially broader recitation of “programmed material consolidation”.

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species. A “representative number of species” means that the species which are adequately described are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. The disclosure of only one species encompassed within a genus adequately describes a claim directed to that genus only if the disclosure “indicates that the patentee has invented species sufficient to constitute the gen[us].” See *Enzo Biochem*, 323 F.3d at 966, 63 USPQ2d at 1615. “A patentee will not be deemed to have invented species sufficient to constitute the genus by virtue of having disclosed a single species when ... the evidence indicates ordinary artisans could not predict the operability in the invention of any species other than the one disclosed.” *In re Curtis*, 354 F.3d 1347, 1358, 69 USPQ2d 1274, 1282 (Fed. Cir. 2004) (MPEP 2163.04)

In the present instance, the disclosure in the specification as originally filed of only one species (stereolithography) of a genus (“programmed material consolidation”) does not constitute a “representative number of species” of that genus, especially when said genus displays art-recognized degrees of differences and variations in modes of operation, use of materials, etc., therefore the specification as originally filed does not provide adequate support for the substantially broader recitation of “programmed material consolidation”.

(B) Applicant argues that the terms “substantially planar” is not vague and indefinite because the specification as originally filed clearly establishes the meaning of those terms. However, with respect to “substantially planar”, the specification only discloses what constitutes a planar surface, but does not clearly establish what constitutes a “substantially” planar surface,

Art Unit: 1773

since how much deviation from a planar surface is dependent on various situations.

Furthermore, it is unclear whether the "substantially planar" encompass small scale irregularities (e.g., on the microscopic scale) and/or whether the term is intended to refer to macroscopic scale irregularities such as the presence of 'minor' amounts of surface curvature, and in either case, how much nonplanarity is permissible, since the determination of planarity is highly situation-dependent.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 25, 2006



Vivian Chen  
Primary Examiner  
Art Unit 1773